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Containers: Architectural Forms

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The broad objective set forth at the beginning of the thesis period is as follows:

My thesis will constitute an investigation of architectural forms conceived in clay as container objects; the treatment of the clay surface as a color-graphic field. Emphasis will be on a relationship of the two and three dimensional realm of form as it relates to the glazed surface and clay object. Each of these areas contain elements of design which I intend to solve and bring together as one total form.

In working with a broad objective as a starting point, I have since focused my area of study to more immediate objectives which would include the following:

1. To create an architectural container.
2. To use slip casting as the method to duplicate a sculptured form.
3. To develop an understanding of and skill in the slip casting process.
4. To make subtle changes in each cast, clay form.
5. To work with different color combinations of low-fire glazes.
6. To apply glazes to the surface of the container as hard edge patterns which relate to the object as a container and hard-edge sculpture.

The evolution of an architectural form in the production of the thesis study was the result of previous research into the Art Deco period of the 1920s and 1930s.

Art Deco was "an assertively modern style, developing in the 1920s and reaching its high point in the thirties; it drew inspiration from various sources, including the more austere side of Art Nouveau, cubism, the Russian Ballet, American Indian art and the Bauhaus; it was a classical style in that, like neo-classicism but unlike Rococo or Art Nouveau, it ran to symmetry rather than asymmetry, and to the rectilinear rather than the curvilinear; it responded to the demands of the machine and of new materials such as plastics, ferro-concrete and vita-glass, and its ultimate aim was to end the old conflict between art and industry, the old snobbish distinction between artist and artisan, partly by making artists adept at crafts, but still more by adapting design to the requirements of mass-production."¹

Areas such as glass, ceramics, metals, furniture, and architecture reflected forms hard-edged in design. The hard-edge and vertical direction in my forms suggested skyscraper buildings of the 1930s, hence the architectural title. The Webster New World Dictionary defines architecture as, "1. the science, art, or profession of designing and constructing buildings, 2. design and construction." The latter, I feel, qualifies the pieces I have made as architectural.

The schematic drawings which follow, illustrate the components of design applied to make the container forms. The elements of line, shape, value, space, and color are the areas to be discussed. Actual construction of the ceramic pieces is discussed later in detail under the area of "The Slip Casting Process- The Making and Construction of the Mold".

The decision to illustrate only one specific view of the object rather than many views was made to minimize the complexity of the various angles and sides contained in the piece. Application of the

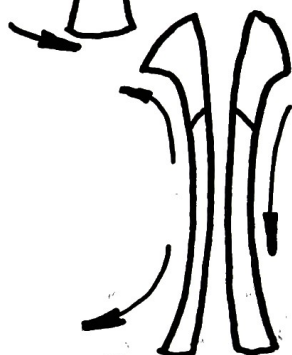
¹ Hillier, Art Deco, p. 13.

basic information to the complexity of the combined elements of design can be seen in the portfolio of photographs contained herein.



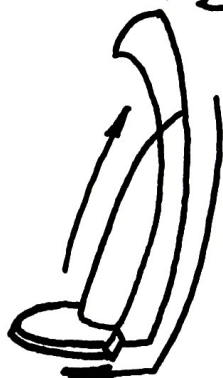
LINE

Ascending and descending flow of line contributes visual dynamics. Concave like line supports visual dynamics and adds thrust to direction of line.



The vertical direction of the line leads the eye of the viewer to the horizontal element of the object. Direction of line flowing from handle leads the eye of the viewer to the surrounding space of the object.

The downward vertical flow of line leads the eye to the horizontal base.



The upward and outward thrust of line is contrasted with the juxtaposition of a convex like line originating at the base. This contrast gives visual weight and fullness of form to the piece. Exaggeration of the theme of "earth-bound" is continued in the base of the form.

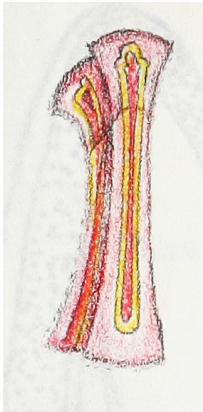


VALUE

Values created by light can define space and form.

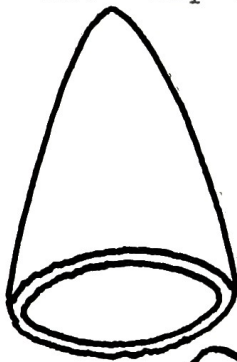
By controlling the angle and intensity of light, spacial effects and form can be made to appear subtle or contrasting.

COLOR

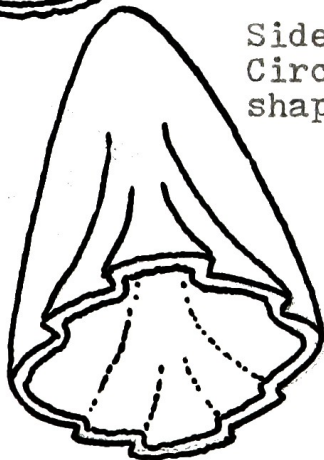


Commercially prepared low fire glazes are used as hard-edge areas of color to further describe the ceramic form. Because of the severity of design of the ceramic form, any glaze contrasts should be used with restraint. The addition of overglaze lusters is used to define more accurately the hard-edge theme of the form, and to visually hold two colors together. The technical aspect of glaze application for the purpose of hard-edge areas of color is achieved by masking around the area to be glazed with Scotch masking tape and then brushing 2-3 coats of glaze in opposite directions. Similar procedures are followed for the luster glaze application except an artist's airbrush is used to insure an even coverage of the glaze.

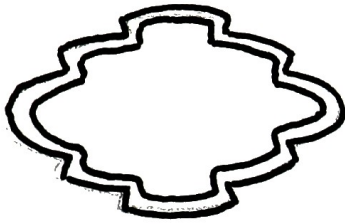
The Slip Casting Process - The Making and Construction of the Mold.



Bullet-shape form thrown on potter's wheel without bottom. Wall thickness should be sufficient to hold force of liquid plaster.



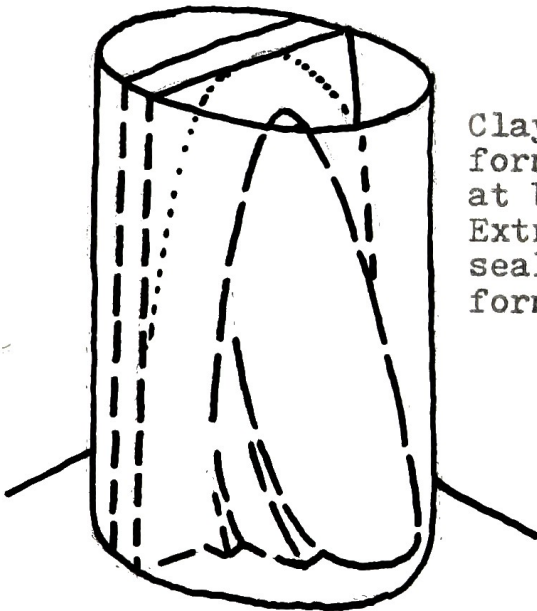
Side walls cut and overlapped. Circular shape transformed to elliptical shape.



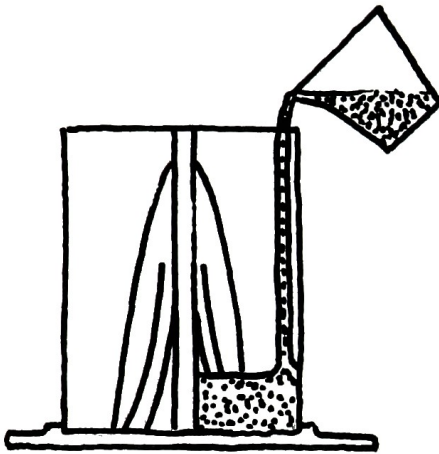
Edge produced in cutting and overlapping should be trimmed to minimize undercut.



At this time the condition of the clay should be between plastic and leather-hard. (Slaking occurs when clay model is too dry.)

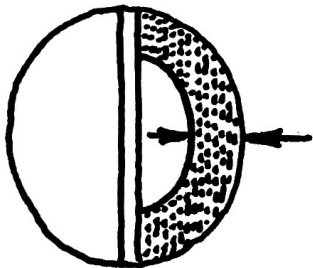


Clay model is enclosed by seamless form and secured against leakage at bottom with clay. Extra clay is added to entirely seal off one half of cardboard form and clay model.

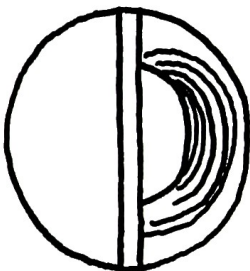


#1 Pottery plaster is sprinkled into water until water will no longer absorb plaster.

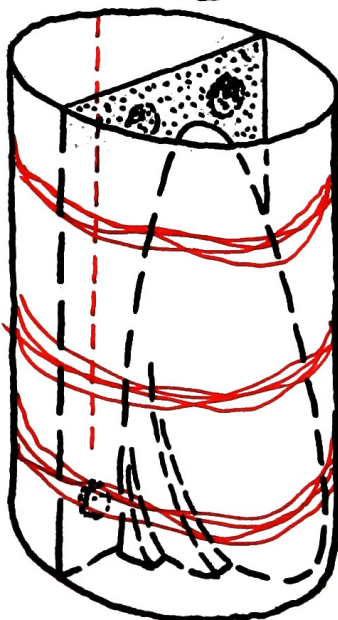
Three to four minutes is allowed for chemical process to take place, then plaster mixture is gently stirred and immediately poured into bottom of form. Plaster should never be poured over model; otherwise layers of plaster will develop instead of one uniform thickness between model and outside wall.



UNIFORMITY



Different layers created from pouring liquid plaster over model. Deflocculant in casting slip will cause break down of plaster layers with each casting.



Following approximately 30 minutes of setting time, the cardboard form is cut and pulled from model (dotted red line)

The clay banding used to divide the mold into two parts is removed and registration holes are gouged into the exposed surface.

Heavy dish washing soap is evenly applied to the plaster seam as well as the gouged holes; the cardboard form is replaced, and wire strapping secured around mold. (red line)

Liquid plaster is then poured into the cardboard form, thus completing the second half of the two part mold.

After 30 minutes of setting time, the mold is separated and the clay model is removed to be used again as a model, or discarded as waste. If the piece is to be used again, measures should be taken to keep the piece moist and free from exposure to drying air.

Clay residue which adheres to the interior of the mold's surface should be immediately flushed with clean water. the plaster mold is allowed to dry for 48 hours or longer depending on the humidity of the atmosphere. Any irregularities on the mold's surface should be shaved or sanded with steel wool to insure easier release of cast clay from mold's surface. (Note: The same procedures were followed in fabricating the plaster mold for the handle of the container form.)

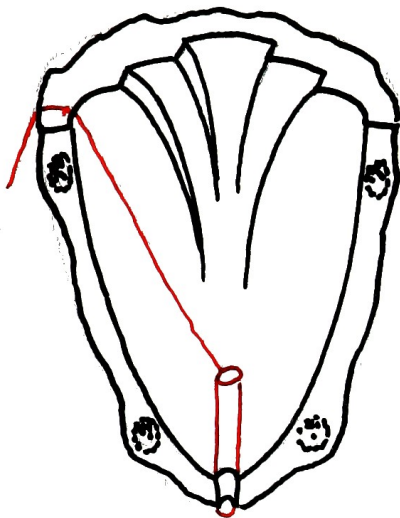
- Casting the Slip

"The usual casting slip has about 35-50 parts of water to the dry ingredients by weight, and about one third of 1 percent of deflocculant by weight of the dry ingredients. The most commonly used deflocculants are sodium silicate, and soda ash."²

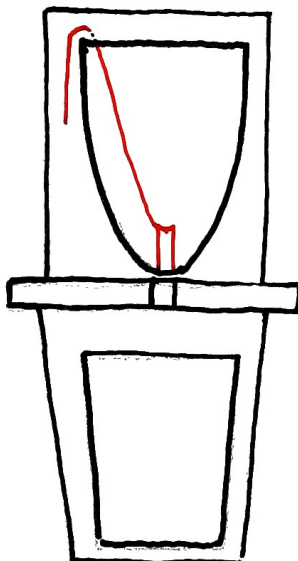
Because of time spent in construction of body and handle molds, insufficient time was available to test various casting slip recipes. Instead a commercially prepared cone 04 white casting slip was used and identified with the brand name of Miller's Casting Slip.

Slip casting of small forms is a relatively easy process, but becomes more difficult as the object to be cast becomes larger. Below is a series of sketches and remarks about the process, and solutions discovered to eliminate unnecessary complications.

² Rhodes, Clay and Glazes for the Potter, p. 40.



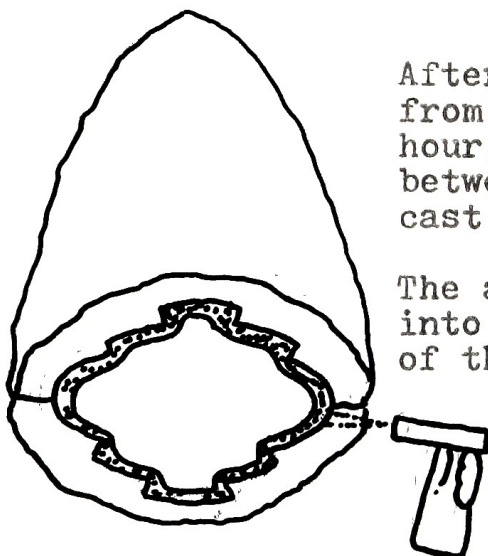
The plaster mold should be free of dust and any dried casting slip. A sponge and a vinegar solution is used to remove dry casting slip. A one half inch hole is drilled in the bottom of the mold for the drainage of the slip because the combined weights of the slip and mold make it difficult to empty by pouring. A wooden dowel rod is used to plug hole.



A heavy cardboard form with a hole cut in the bottom is used to house plaster mold.

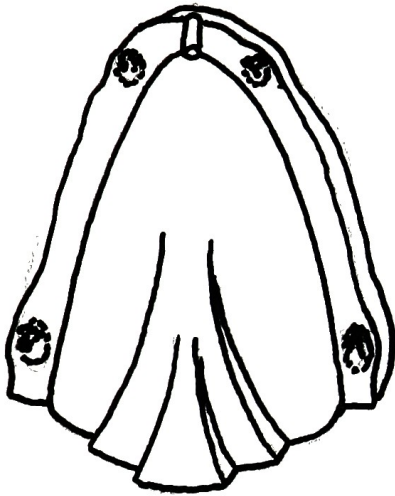
After build-up in wall thickness develops to one quarter inch, the dowel rod is pulled quickly from the hole and slip drains from the plaster mold through the hole in the cardboard form and into a reclaim bucket housed in a garbage can.

One quarter inch casting takes approximately 40-45 minutes to develop.



After the cast begins to release from the mold in approximately one hour, compressed air is sprayed between the mold wall and outer cast wall to facilitate drying.

The air gun forces drying air deep into the mold to equalize shrinkage of the cast.

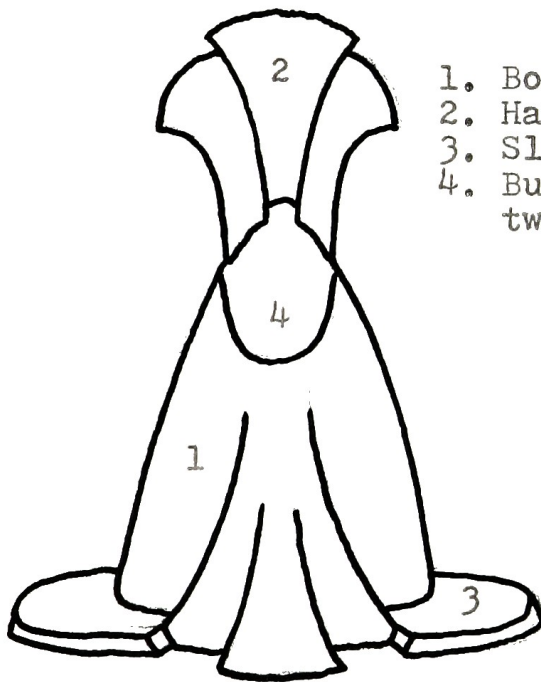


Firm lifting pressure at this time is necessary to release one half of the plaster mold from the clay cast. With one half of the cast exposed, gentle jets of air can be sprayed at the seam of the cast and mold to quickly shrink the cast from the wall of the mold.

Firm pressure and jets of air eventually cause total release of cast from mold.

At this stage, shaping and manipulation of the clay is a part of the process which I have tried to utilize to create subtle differences within each succeeding container, rather than casting identical, repeated forms. (Note: In casting the handle, the same procedures would be followed.)

Thus the total process of construction and design is as follows:



1. Body cast and altered.
2. Handle cast and applied to body.
3. Slab-rolled base joined to body.
4. Bullet form is cut to produce two pieces: lid and body.

I believe my area of study has sufficiently involved me with a new method of clay construction; control of glaze application and design; and development of an architectural form as a container object.

During the course of the thesis period, I have deliberately limited my area of study. The final conclusion to make at this time involves expanding beyond the thesis limitation to include the following areas for future study.

1. Ceramic decalcomania techniques without the madness.
2. Tests of casting slip recipes for cones 04, 5, and 9 in an oxidizing atmosphere.
3. Press mold method of construction for textural effects.
4. Press mold method of construction combining various colored porcelain clay bodies.
5. Designing and constructing various handle molds.

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- McCrimmon, James M. Writing with a Purpose. Boston: Houghton Mifflin Company, 1963.
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- Rhodes, Daniel. Clay and Glazes for the Potter. Philadelphia: Chilton Book Company, 1973.

List and Description of Photographs of Work-Prints
from Thesis Show

Selected forms leading to the Thesis Project.

- I. Container, stoneware with white gloss glaze and mother of pearl and gold luster.
- II. Container, stoneware with white mat glaze and mother of pearl and platinum luster.
- III. Container, stoneware with Shaner's white glaze, and turquoise and gold luster.
- IV. Container, earthenware with commercial cone 06 mat and gloss brown glazes. White design masked and painted with white acrylic enamel paint.

The Thesis Project. (All containers are 20½"h.)

- V. Container, cone 04 casting slip with commercial cone 06 Dark Red and Cherry Red gloss glazes. Two colors separated by cone 018 gold luster.
- VI. Container, cone 04 casting slip with commercial gloss blue glaze and platinum luster airbrushed over commercial semiopaque, gloss glaze.
- VII. Container, cone 04 casting slip with commercial cone 06 Dark Red gloss glaze and commercial red mat glaze. Black line masked and painted with black acrylic enamel paint.
- VIII. Container, cone 04 casting slip commercial cone 06 black gloss glaze and turquoise luster airbrushed over entire form. Linear design masked and sprayed with palladium luster.
- IX. Container, cone 04 casting slip with brushed pink and brown commercial underglazes. Copper luster airbrushed after masking area to be sprayed.
- X. Cone 04 cast container form fired to cone 9 reduction.
- XI. Container, cone 04 casting slip with commercial cone 06 turquoise gloss glaze and commercial Milk Glass glaze. Platinum and palladium lusters added as overglaze decoration.







III





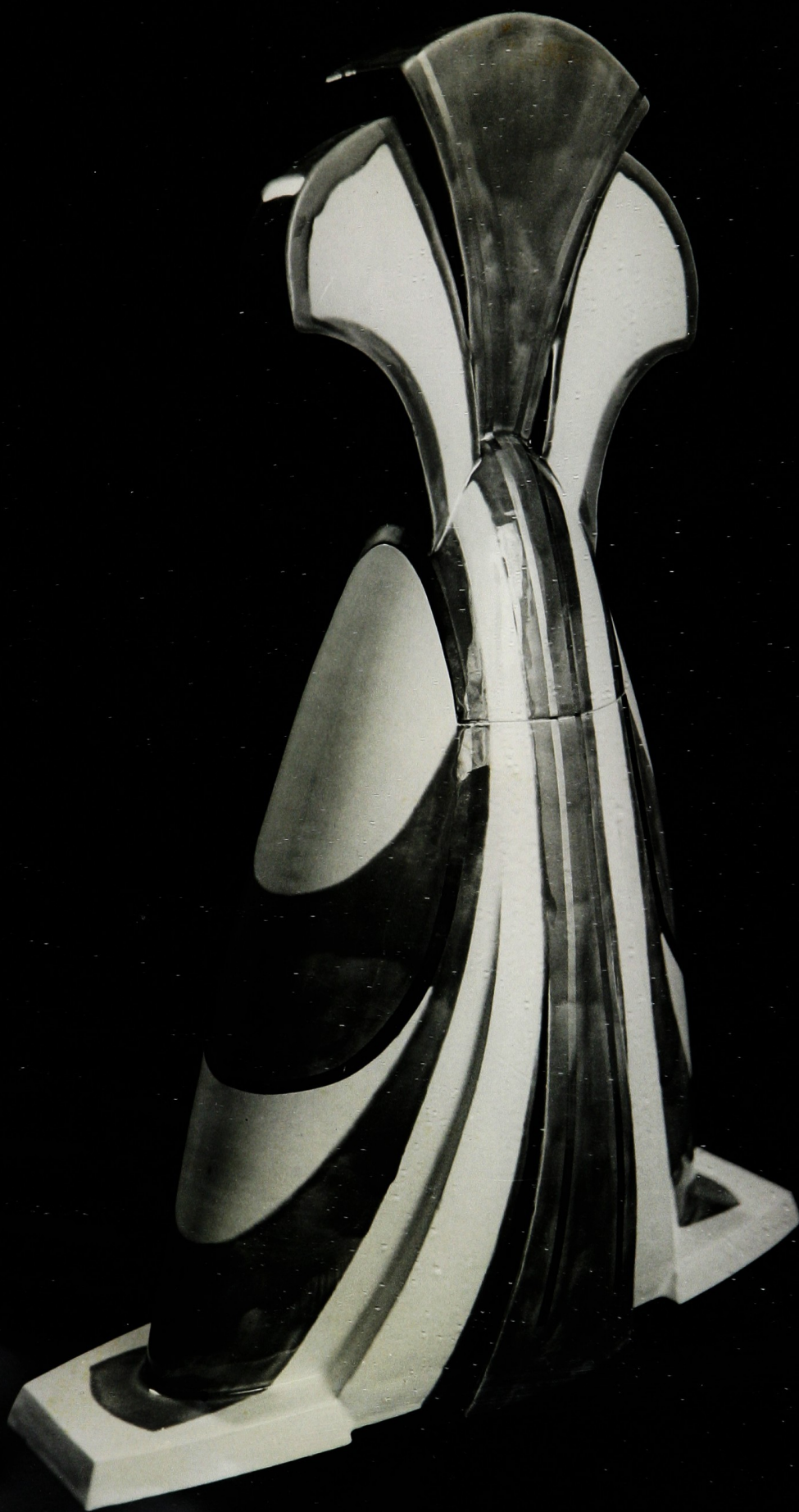












Color Prints of Work

I



II



III



IV



V



VI



VII



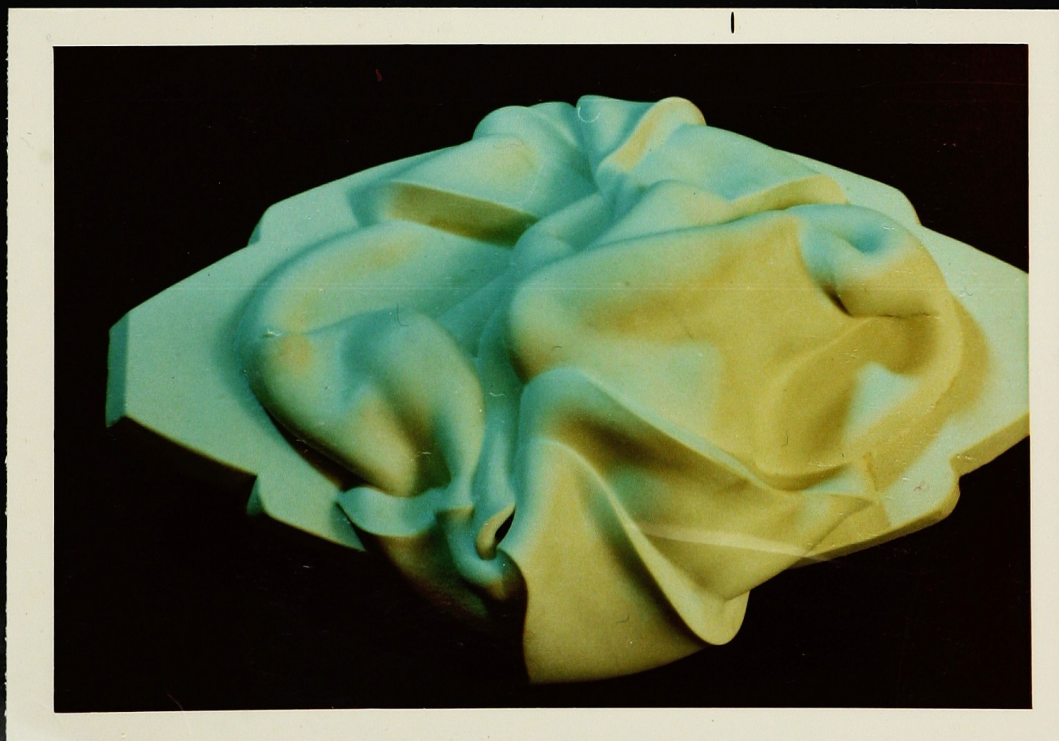
VIII





IX

X



XI



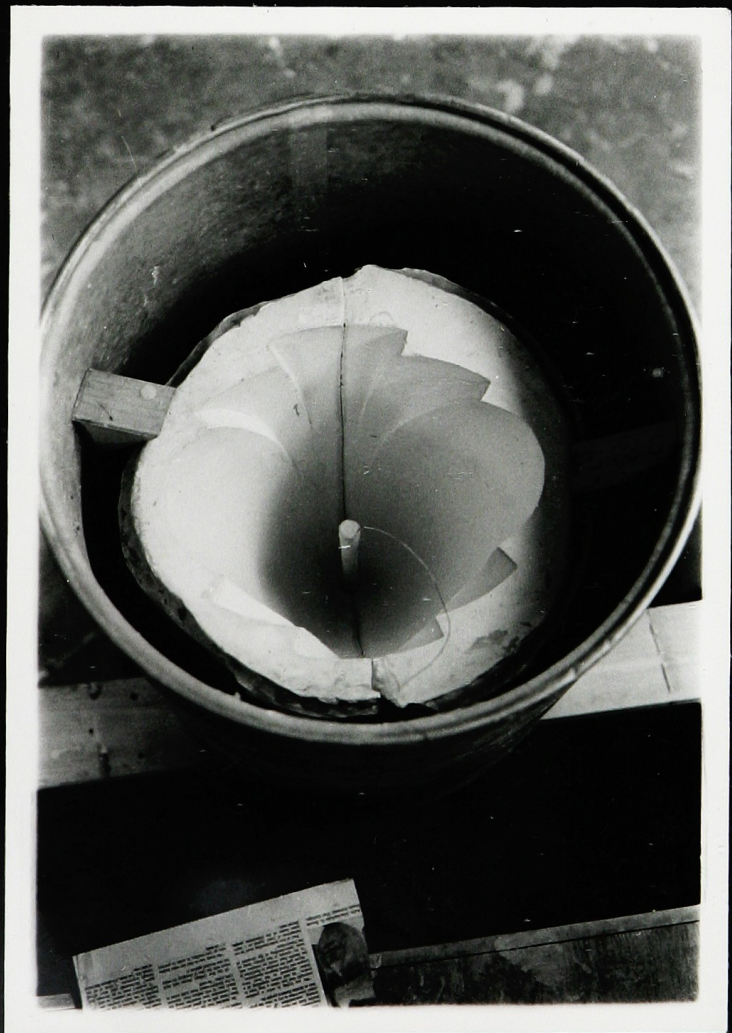
Description and Photographic Documentation of
the Slip Casting Process

The molds are cleaned at the seams in preparation for casting to insure tightness when the halves of the molds are joined together.

The banding straps are made taut with clay and wood wedges to prevent leakage of the casting slip during the initial stage of the pouring phase.



The body mold portion of the container form is placed into a heavy cardboard form, secured in a level position, the drain plug is inserted, and the mold and the cardboard form are lifted onto a 2x4 inch bridge which is situated above a reclaim barrel.

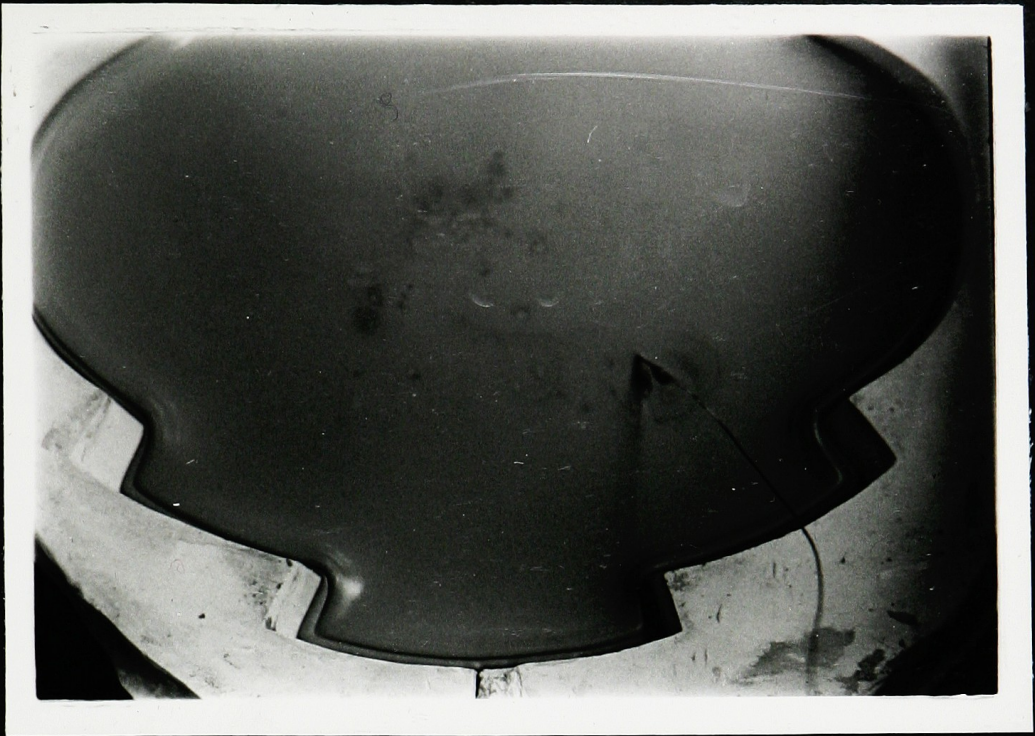


The casting slip which has been thoroughly mixed is poured slowly into the plaster molds.



The molds are allowed to set for approximately 40 minutes at which time a one quarter inch layer of casting slip forms at the wall of the plaster mold. This is the result of the water in the casting slip, as well as some deflocculant, being absorbed into the dry plaster mold.

The dowel rod is quickly pulled and the slip drains into the reclaim barrel underneath the mold and cardboard form.



Once both molds are drained, air is able to pass inside the molds and drying begins.

After approximately 60 minutes, partial drying and shrinkage is equalized with compressed air directed deep between the cast and the mold, and eventually the cast completely separates from the mold.



The casts are manipulated and altered from their original form, joined together, and attached to a slab-rolled base which is then cut and designed to relate to the manipulated body and handle.

